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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/903,620	07/13/2001	Matias B. Vanotti	0054.98	2203

25295 7590 10/08/2003

USDA, ARS, OTT
5601 SUNNYSIDE AVE
RM 4-1159
BELTSVILLE, MD 20705-5131

EXAMINER	
BARRY, CHESTER T	
ART UNIT	**PAPER NUMBER**
1724	

DATE MAILED: 10/08/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/903,620	VANOTTI ET AL.	
	Examiner	Art Unit	
	Chester T. Barry	1724	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 July 2001* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-26* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6,8-10,12-14 and 17-26* is/are rejected.

7)☒ Claim(s) *7,11,15 and 16* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *13 July 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *4* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

Claim 1 is rejected under 35 U.S.C. Sec. 102(b) as anticipated by USP 5759401 to Boussely. Boussely describes activated sludge treatment in an aerobic tank/environment in which aerobic biological oxidation takes place (4/50). The skilled artisan would have understood that nitrification takes place under such conditions, as shown, for example, by USP 4780208 to Bohnke, or by USP 3964998 to Barnard. In nitrification, the carbonate and ammonium buffer levels are reduced. See, for example, USP 5811009 to Kos. In short, reduction in levels of carbonate, ammonium buffers, and alkalinity is inherent in any biological nitrification process. After nitrification, Boussely adds coagulent (salts of alkaline earth metals) so that downstream recovery of phosphorus may be effected through clarification.

Claim 2 is rejected under 35 U.S.C. Sec. 103(a) as obvious over Boussely as applied to claim 1 above, further in view of USP 5268105 to Uejima. Uejima at col 2 lines 58 – 63 teaches that the wastewater treatment art recognizes calcium hydroxide as an alkaline earth metal salt. Therefore, it would have been obvious to have selected calcium hydroxide for use in the Boussely method.

Claims 1 – 2 are rejected under 35 U.S.C. Sec. 102(b) as anticipated by USP 3964998 to Barnard. Barnard describes nitrification followed by addition of lime (CaO) to a wasted sludge stream to effect phosphate removal. See col 15.

Claims 3 – 6 are rejected under 35 U.S.C. Sec. 103(a) as obvious over Barnard and USP 4017388 to Albertson. Barnard treats the wastewater to nitrification with subsequent downstream phosphorus removal using a known technique. Barnard does not teach adding alkali to raise the pH before phosphorus removal to at least 9, as claimed. It would have been obvious to have increased the pH of the nitrified wastewater to at least 9 before addition of calcium hydroxide (as taught by Albertson) to effect improved phosphorus sludge cake dewatering, as shown by Albertson (claim 1 and entire document).

Claims 8 – 11, 13 - 14 are rejected under 35 U.S.C. Sec. 103(a) as obvious over Barnard, Albertson and USP 5622697 to Moore. Barnard treats the wastewater to nitrification with subsequent downstream phosphorus removal using a known technique. Barnard does not teach adding alkali to raise the pH before phosphorus removal to at least 9, as claimed. It would have been obvious to have increased the pH of the nitrified wastewater to at least 9 before addition of calcium hydroxide (as taught by Albertson) to effect improved phosphorus sludge cake dewatering, as shown by Albertson (claim 1 and entire document). Barnard also does not teach controlling the N/P ratio to a desired value. It was widely known to apply phosphorus sludge as a soil amendment / fertilizer. The N/P ratio is a well known and important parameter in the quality and effectiveness of fertilizers, as shown by Moore. Accordingly, it would have been obvious to have controlled the N/P ratio to increase the value of the phosphorus sludge for subsequent use as a fertilizer.

USP 5753109 is cited of interest for teaching the importance of the C/N/P ratio.

Claims 21, 23, 24, 25 are rejected under 35 U.S.C. Sec. 102(b) as anticipated by Barnard. Barnard describes a solid separation unit 22, an aeration unit 20, a nitrification unit 16, and a phosphorus separation unit (downstream phosphorus removal step, col 5 lines 25 – 28). The nitrification unit 16 is in fluid communication – albeit not in direct fluid communication - with the aeration unit 20 because unit 18 does not prohibit movement of fluid from 16 to 20. Similarly, solid separation unit 22 is in indirect fluid communication with nitrification unit 16 because unit 14 does not impede flow of fluid from 22 to 16 via 26, 30, 31, 14. Per claim 24, denitrification unit is shown at 18.

Claims 22 and 24 are rejected under 35 U.S.C. Sec. 103(a) as obvious over Barnard. Barnard anticipated by Barnard. Barnard describes the solid separation step 22 as a clarification step. It is notoriously well known to use flocculants to improve separation between suspended solids and water in a clarification step. Accordingly, it would have been obvious to have used flocculants in the clarification step in vessel 22 to improve clarification of the effluent water and/or reduce water content of the onderflowing sludge.

Claims 7, 11, 15, 16 are objected to as dependent on a rejected base claim, but would be allowable if presented in independent form.

Claims 17 - 20 are rejected under 35 U.S.C. Sec. 112, 2nd parag., for failing to particularly point out and distinctly claim the subject matter for which patent protection is sought. Claim 17 fails to provide antecedent basis for the expression, "said aeration unit." Claim 20, a system claim, attempts to further limit a method claim. Corrections are required.

Matsuo teaches it is conventional in this art to adjust the pH of the feed to a phosphate removal process.

CHESTER T. BARRY
PRIMARY EXAMINER
703-306-5921